The Wetting and Dispersing Process

Wetting and Dispersing, Viscosity Reduction and Higher Filler Load

Incorporation of fillers increases paste viscosity. BYK wetting and dispersing additives facilitate the incorporation of fillers and lower paste viscosity. As a result, higher filler loading is possible. Lower viscosity improves and speeds up the wetting of the glass fibers.

Lower Viscosity, Higher Filler Load

Anti-Separation Additives

LS or LP additives such as PS or SBS are incompatible with the UP resin and can cause phase separation in the paste. The use of BYK additives helps to compatibilize both phases and stabilize the paste during storage and processing.
Air Release

During the preparation of the paste, air is also incorporated. Depending on the formulation and process, air can cause major problems. BYK air release additives speed up the deaeration of the paste.

Anti-Sedimentation

Low filled systems tend to settle. This effect is even greater when coarser fillers are used. BYK offers a wide range of additives to stabilize the resin mix.

Fiber Wetting

Some BYK additives can improve fiber wetting. Especially in lower filled high glass content products, these additives improve wet-out.

Defoaming Versus Air Release

Foam on the surface. Defoamers destabilize the foam bubbles.

Air incorporation within the layer itself. Air release agents accelerate the migration of the bubbles to the surface.

Selection Guide

<table>
<thead>
<tr>
<th>UP/VE resins</th>
<th>Acrylic resins</th>
<th>EP resins</th>
<th>Recommended dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-separation</td>
<td>BYK-9076</td>
<td>BYK-W 972</td>
<td>0.5-1 phr</td>
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<tr>
<td></td>
<td></td>
<td>BYK-W 974</td>
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<tr>
<td>Anti-sedimentation</td>
<td>ANTI-TERRA-204</td>
<td>ANTI-TERRA-204</td>
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<tr>
<td></td>
<td>BYK-W 940</td>
<td>BYK-W 980</td>
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<tr>
<td>Wetting and dispersing, viscosity reduction and higher filler load</td>
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<td>BYK-W 9011</td>
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<td>BYK-W 996</td>
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<td></td>
<td>BYK-A 530</td>
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<td>1-2% based on total resin and hardener</td>
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<td>BYK-9076</td>
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<tr>
<td>Lubrification (filled systems)</td>
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<td>1.5-2.5% based on total resin</td>
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</tbody>
</table>

figure 4

figure 5
Products and Applications

BYK Additives

Product Range Additives:

- Additives to improve surface slip, leveling and substrate wetting
- Adhesion promoters
- Defoamers and air release agents
- Foam stabilizers
- Processing additives
- Rheological additives
- UV-absorbers
- Viscosity depressants
- Waxes
- Wetting and dispersing additives for pigments and extenders

BYK-Chemie GmbH
P.O. Box 10 02 45
46462 Wesel
Germany
Tel +49 281 670-0
Fax +49 281 65735
info@byk.com
www.byk.com/additives

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BYK-Gardner GmbH
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82534 Geretsried
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www.byk.com/instruments

Application Areas:

Coatings Industry
- Architectural Coatings
- Automotive Coatings
- Industrial Coatings
- Can Coatings
- Coil Coatings
- Wood & Furniture Coatings
- Powder Coatings
- Leather Finishes
- Protective & Marine Coatings

Plastics Industry
- Ambient Curing Systems
- PVC Plastisols
- SMC/BMC
- Thermoplastics

PUR Industry
- C.A.S.E. Applications
- PUR Foams

Printing Ink Industry
- Flexo Inks
- Gravure Inks
- Silk Screen Inks
- Offset Inks
- Overprint Varnishes

Paper Coatings
- Impregnation
- Coatings

Adhesives & Sealants

Construction Chemicals

Pigment Concentrates

Raw Materials for Manufacturing of Release Agents